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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,083	09/15/2003	Jie Liu	132096	8856
41838 7590 08/27/2007 GENERAL ELECTRIC COMPANY (PCPI) C/O FLETCHER YODER P. O. BOX 692289 HOUSTON, TX 77269-2289			EXAMINER TRAN, MINH LOAN	
			ART UNIT 2826	PAPER NUMBER
			MAIL DATE 08/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/662,083

Applicant(s)

JIE LIU ET AL

Examiner

Minh-Loan T. Tran

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

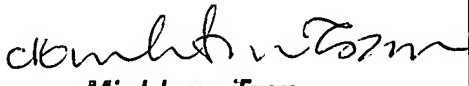
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 19-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 37-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
**Minhloan Tran**  
**Primary Examiner**  
**Art Unit 2826**

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's communication filed on 04/02/2007 has been carefully considered by the examiner. The arguments advanced therein are persuasive with respect to the rejections of record and those rejections are accordingly withdrawn. In view of a further search and consideration, however, a new rejection is set forth further below. This action is not made final.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 10, 37-39, 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Buckley et al. (WO 02/069,412).

Figure 2 of Buckley et al. discloses an electroluminescent device comprising an Al first electrode 12; a second electrode (15, 16) comprises a LiF first layer 16 comprising at least a halide compound of at least a metal selected from the group consisting of alkali metals and alkaline-earth metals and having a thickness from 50 nm to 500 nm; a Ca second layer 15 having a thickness from 5 nm to 50 nm; at least an opto-electronically active material 14 disposed between the first Al electrode 12 and the second electrode (15, 16); wherein the Ca second layer 15 is disposed between the LiF first layer 16 and the electronically active material 14.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5, 7-9, 11-18, 40, 41, 43, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckley et al. (WO 02/069,412).

With regard to claims 4, 5, 40, 41, figure 2 of Buckley et al. discloses all the subject matter claimed except for the first layer of the second electrode comprises a fluoride compound of an alkali metal selected from the group consisting of sodium and potassium. However, it would have been obvious to one of ordinary skill in the art to form the first layer of the second electrode comprises a fluoride compound of an alkali metal selected from the group consisting of sodium and potassium in order to enhance the external efficiency of the EL device. Note right column on page 3470 of Duggal et al. (Applied Physics Letters, vol. 80, Number 19) is cited to support for the well known position.

With regard to claims 7, 8, 43, 44, figure 2 of Buckley et al. discloses all the subject matter claimed except for the second layer of the second electrode comprises aluminum. However, it would have been obvious to one of ordinary skill in the art to form the second layer of the second electrode comprises aluminum because such material is conventional in the art for forming cathode electrode for the EL device. Note

Art Unit: 2826

right column on page 3470 of Duggal et al. (Applied Physics Letters, vol. 80, Number 19) is cited to support for the well known position.

With regard to claims 9 and 16, figure 2 of Buckley et al. discloses all the subject matter claimed except for the first electrode comprises a metal oxide. However, it would have been obvious to one of ordinary skill in the art to form the first electrode comprises a metal oxide in order to reduce the contact resistance between the anode electrode and the organic active layer. Note right column on page 3470 of Duggal et al. (Applied Physics Letters, vol. 80, number 19) is cited to support for the well known position..

With regard to claims 11-13, figure 2 of Buckley et al. discloses all the subject matter claimed except for the material of the opto-electronically active material.

Although Buckley et al. does not teach exact the material of the opto-electronically active material as that claimed by Applicant, the material differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes. It appears that these changes produce no functional differences and therefore would have been obvious. Note *In re Leshin*, 125 USPQ 416, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Circ. 1990).

With regard to claims 14 and 15, figure 2 of Buckley et al. discloses all the subject matter claimed except for the additional layer that comprises a substantially transparent, electrically conducting material disposed on the first layer of the second electrode. However, it would have been obvious to one of ordinary skill in the art to form an additional layer that comprises a substantially transparent, electrically conducting

material disposed on the first layer 16 of the second electrode in order to promote carrier injection.

With regard to claim 17, figure 2 of Buckley et al. discloses all the subject matter claimed except for the electronic device is a photovoltaic cell. Although Buckley et al. does not teach exact the type of the electronic device as that claimed by Applicant, the type differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes. It appears that these changes produce no functional differences and therefore would have been obvious. Note *In re Leshin*, 125 USPQ 416, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Circ. 1990).

With regard to claim 18, figure 2 of Buckley et al. discloses all the subject matter claimed except for the first layer of the second electrode comprises a fluoride compound of an alkali metal selected from the group consisting of sodium and potassium, the second layer comprises aluminum and the organic light emitting material comprises polyfluorene. However, it would have been obvious to one of ordinary skill in the art to form the first layer of the second electrode comprises a fluoride compound of an alkali metal selected from the group consisting of sodium and potassium, and the second layer comprises aluminum in order to enhance the external efficiency of the EL device. Note right column on page 3470 of Duggal et al. (Applied Physics Letters, vol. 80, Number 19) is cited to support for the well known position. Further, although Buckley et al. does not teach exact the material of the organic light emitting material as that claimed by Applicant, the material differences are considered obvious design choices

and are not patentable unless unobvious or unexpected results are obtained from these changes. It appears that these changes produce no functional differences and therefore would have been obvious. Note *In re Leshin*, 125 USPQ 416, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Circ. 1990).

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Loan T. Tran whose telephone number is (571) 272-1922. The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue A. Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2826

8/2007

mlt



Minh-Loan T. Tran

Primary Examiner

Art Unit 2826